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**pitman**

[DES ENG] A device similar to a case, but used on a pipe to grasp it and hoisting or suspension. ('pip,teks)

t [CIV ENG] A buried pipe for carrying sewage below ground level. ('pip,kar)

[DES ENG] A hand tool consisting of a spike device with three cutting wheels forced inward by screw pressure to cut as the tool is rotated around the pipe once. ('pip,kad·ər)

meter [ENG] A variable-head meter measuring flow around the bend in a pipe. ('bo,med·ər)

[ENG] A technician who fits, threads, and repairs pipes in a pipework system. ('är)

[ENG] A piece, such as coupling, nipples, tees, and elbows for connecting pipes. ('pip,fid·ig)

[ENG] Conveyance of fluids in closed systems. ('pip,flō)

[ENG] The placing of pipe into a trench, as with buried pipelines for chemicals. ('pip,lā·ig)

[ENG] A line of pipe connected to other control devices, for conductives, or finely divided solids. ('pip,lin)

[CIV ENG] A steel pipe 6-30 inches (centimeters) in diameter, usually concrete and used for underpinning. ('pip,under)

[ENG] The path followed by a pipe. ('pip,rän)

[ENG] Rust and corrosion products to the inner surfaces of pipes; the ability to transfer heat and to insure drop for flowing fluids. ('pip,cor)

ve [ENG] A hollow, cylindrical form for a concrete wall at the end of a pipe to penetrate in order to flow of concrete into the opening. ('pip,lev)

[CHEM ENG] A petroleum-refining heat is applied to the oil while pumped through a coil or pipe and the oil then running to a fractionating removal of overhead vapors. ('pip,stil)

[ENG] A small threaded hole into the wall of a pipe; used for contents, or connection of pressure-drop-measurement tap. ('pip,tap)

[DES ENG] A T-shaped pipe fitting, one at 90° to the connection. ('pip,tē)

ted [DES ENG] Most commonly used on pipes and tubes, characterized roots and cut with 3/4 foot (about 1.9 centimeters per 300 red). Also known as taper pipe.

**Pipe-thread protector** See thread protector. ('pip,thread prä,tek-tor)

**Pipe tongs** [ENG] Heavy tongs that are hung on a cable and used for screwing pipe and tool joints. ('pip,tängz)

**Pipe train** [ENG] In the extrusion of plastic pipe, the entire equipment assembly used to fabricate the pipe (such as the extruder, die, cooling bath, haul-off, and cutter). ('pip,trän)

**Pipework** See piping. ('pip,wärk)

**Pipe wrench** [DES ENG] A tool designed to grip and turn a pipe or rod about its axis in one direction only. ('pip,rench)

**Piping** [ENG] A system of pipes provided to carry a fluid. Also known as pipework. ('pip,in)

**Piston** [ENG] See force plug. [MECH ENG] A sliding metal cylinder that reciprocates in a tubular housing, either moving against or moved by fluid pressure. ('pis·tan)

**Piston blower** [MECH ENG] A piston-operated, positive-displacement air compressor used for stationary, automobile, and marine duty. ('pis·ton,blo·ər)

**Piston corer** [MECH ENG] A steel tube which is driven into the sediment by a free fall and by a dead attached to the upper end, and which is capable of recovering undistorted vertical sections of sediment. ('pis·tan,kör·ər)

**Piston displacement** [MECH ENG] The volume which a piston in a cylinder displaces in a single stroke, equal to the distance the piston travels times the internal cross section of the cylinder. ('pis·tan,displás·mant)

**Piston drill** [MECH ENG] A heavy percussion-type rock drill mounted either on a horizontal bar or on a short horizontal arm fastened to a vertical column; drills holes to 6 inches (15 centimeters) in diameter. Also known as reciprocating drill. ('pis·tan,jdril)

**Piston engine** [MECH ENG] A type of engine characterized by reciprocating motion of pistons in a cylinder. Also known as displacement engine, reciprocating engine. ('pis·tan,jen·jen)

**Piston gage** See free-piston gage. ('pis·tan,gāj)

**Piston head** [MECH ENG] That part of a piston above the top ring. ('pis·tan,hed)

**Piston meter** [ENG] A variable-area, constant-head fluid-flow meter in which the position of a piston, moved by the buoyant force of the fluid, indicates the flow rate. Also known as piston-type area meter. ('pis·tan,med·ər)

**Piston phone** [ENG ACOUS] A small chamber equipped with a reciprocating piston having a suitable displacement and used to establish own sound pressure in the chamber, as for microphones. ('pis·tan,fōn)

**Pin** [MECH ENG] A cylindrical pin that connects the connecting rod to the piston. Also known as wrist pin. ('pis·tan,pin)

**Piston pump** [MECH ENG] A pump in which motion and pressure are applied to the fluid by a reciprocating piston in a cylinder. Also known as reciprocating pump. ('pis·tan,pump)

**Piston ring** [DES ENG] A sealing ring fitted around a piston and extending to the cylinder wall to prevent leakage. Also known as packing ring. ('pis·tan,ring)

**Piston rod** [MECH ENG] The rod which is connected to the piston, and moves or is moved by the piston. ('pis·tan,rod)

**Piston skirt** [MECH ENG] That part of a piston below the piston pin bore. ('pis·tan,skirt)

**Piston speed** [MECH ENG] The total distance a piston travels in a given time; usually expressed in feet per minute. ('pis·tan,spēd)

**Piston-type area meter** See piston meter. ('pis·tan,tip'er-e·ə,mēd·ər)

**Piston valve** [MECH ENG] A cylindrical type of steam engine slide valve for admission and exhaust of steam. ('pis·tan,ivalv)

**Piston viscometer** [ENG] A device for the measurement of viscosity by the timed fall of a piston through the liquid being tested. ('pis·tan,vi'skäm·ed·ər)

**Pitch** [DES ENG] The distance between similar elements arranged in a pattern or between two points of a mechanical part, as the distance between the peaks of two successive grooves on a disk recording or on a screw. [MECH] 1. Of an aerospace vehicle, an angular displacement about an axis parallel to the lateral axis of the vehicle. 2. The rising and falling motion of the bow of a ship or the tail of an airplane as the craft oscillates about a transverse axis. (pitch)

**Pitch acceleration** [MECH] The angular acceleration of an aircraft or missile about its lateral, or Y, axis. ('pitch,ik,sel·ə,rā·shən)

**Pitch attitude** [MECH] The attitude of an aircraft, rocket, or other flying vehicle, referred to the relationship between the longitudinal body axis and a chosen reference line or plane as seen from the side. ('pitch,ad·ə,tüd)

**Pitch axis** [MECH] A lateral axis through an aircraft, missile, or similar body, about which the body pitches. Also known as pitching axis. ('pitch,ak,sas)

**Pitch circle** [DES ENG] In toothed gears, an imaginary circle concentric with the gear axis which is defined at the thickest point on the teeth and along which the tooth pitch is measured. ('pitch,sar·kal)

**Pitch cone** [DES ENG] A cone representing the pitch surface of a bevel gear. ('pitch,kōn)

**Pitch cylinder** [DES ENG] A cylinder representing the pitch surface of a spur gear. ('pitch,sil·ə·dər)

**Pitch diameter** [DES ENG] The diameter of the pitch circle of a gear. ('pitch,diam·ed·ər)

**Pitched roof** [BUILD] 1. A roof that has one or more surfaces with a slope greater than 10°. 2. A roof that has two slopes meeting at a central ridge. ('picht,rūf)

**Pitching axis** See pitch axis. ('pitch·ig,ak,sas)

**Pitching moment** [MECH] A moment about a lateral axis of an aircraft, rocket, or airfoil. ('pitch·ig,mō·mənt)

**Pitching line** See cam profile. ('pitch,in)

**Pitman** [ENG] 1. A worker in or near a pit, as in a quarry, mine, garage, or foundry. 2. On a

**vacuum pencil**

**vacuum pencil** [ENG] A pencillike length of tubing connected to a small vacuum pump, for picking up semiconductor slices or chips during fabrication of solid-state devices. ('vak-yəm, pen-səl)

**vacuum pump** [MECH ENG] A compressor for exhausting air and noncondensable gases from a space that is to be maintained at subatmospheric pressure. ('vak-yəm, pamp)

**vacuum relief valve** [ENG] A pressure relief device which is designed to allow fluid to enter a pressure vessel in order to avoid extreme internal vacuum. ('vak-yəm ri'lēf, valv)

**vacuum shelf dryer** [ENG] A type of indirect batch dryer which generally consists of a vacuum-tight cubical or cylindrical chamber of cast-iron or steel plate, heated supporting shelves inside the chamber, a vacuum source, and a condenser; used extensively for drying pharmaceuticals, temperature-sensitive or easily oxidizable materials, and small batches of high-cost products where any product loss must be avoided. ('vak-yəm 'shelf, drī-ər)

**vacuum support** [MECH ENG] That portion of a rupture disk device which prevents deformation of the disk resulting from vacuum or rapid pressure change. ('vak-yəm sə,pōrt)

**vacuum-tube voltmeter** [ENG] Any of several types of instrument in which vacuum tubes, acting as amplifiers or rectifiers, are used in circuits for the measurement of alternating-current or direct-current voltage. Abbreviated VTVM. Also known as tube voltmeter. ('vak-yəm tüb 'volt, mēd-ər)

**vacuum-type insulation** [CHEM ENG] Highly reflective double-wall structure with high vacuum between the walls; used as insulation for cryogenic systems; Dewar flasks have vacuum-type insulation. ('vak-yəm tüp in'səlā-shən)

**VAD** See vapor-phase axial deposition. (vad or, vē, a'dē)

**valley** [BUILD] An inside angle formed where two sloping sides intersect. ('val-ē)

**valley rafter** [BUILD] A part of the roof frame that extends diagonally from an inside corner plate to the ridge board at the intersection of two roof surfaces. ('val-ē, raf-tər)

**valley roof** [BUILD] A pitched roof with one or more valleys. ('val-ē, rūf)

**value analysis** See value engineering. ('val-yü, ə,nal-ə-sis).

**value control** See value engineering. ('val-yü, kən,trōl)

**value engineering** [IND ENG] The systematic application of recognized techniques which identify the function of a product or service, and provide the necessary function reliably at lowest overall cost. Also known as value analysis; value control. ('val-yü, en-ji,nir-ing)

**value theory** [SYS ENG] A concept normally associated with decision theory; it strives to evaluate relative utilities of simple and mixed parameters which can be used to describe outcomes. ('val-yü, thē-ə-rē)

**valve** See electron tube. [MECH ENG] A device

used to regulate the flow of fluids in piping systems and machinery. (valv)

**valve follower** [MECH ENG] A linkage between the cam and the push rod of a valve train. ('valv, fol-ə-war)

**valve guide** [MECH ENG] A channel which supports the stem of a poppet valve for maintenance of alignment. ('valv, gīd)

**valve head** [MECH ENG] The disk part of a poppet valve that gives a tight closure on the valve seat. ('valv, hed)

**valve-in-head engine** See overhead-valve engine. ('valv in'head 'en-ə-jən)

**valve lifter** [MECH ENG] A device for opening the valve of a cylinder as in an internal combustion engine. ('valv, lif-tər)

**valve positioner** [CONT SYS] A pneumatic servomechanism which is used as a component in process control systems to improve operating characteristics of valves by reducing hysteresis. Also known as pneumatic servo. ('valv pə,zish-nər)

**valve seat** [DES ENG] The circular metal ring on which the valve head of a poppet valve rests when closed. ('valv, sēt)

**valve stem** [MECH ENG] The rod by means of which the disk or plug is moved to open and close a valve. ('valv, stem)

**valve train** [MECH ENG] The valves and valve-operating mechanism for the control of fluid flow to and from a piston-cylinder machine, for example, steam, diesel, or gasoline engine. ('valv, trān)

**van der Waals surface tension formula** [THERMO]

An empirical formula for the dependence of the surface tension on temperature:  $\gamma = K_p T_c^{1/3} (1 - T/T_c)^\eta$ , where  $\gamma$  is the surface tension,  $T$  is the temperature,  $T_c$  and  $p_c$  are the critical temperature and pressure,  $K$  is a constant, and  $\eta$  is a constant equal to approximately 1.23. ('van dər, wəlz 'sər-fəns, ten-chān, fər-myə-lə)

**Van Dorn sampler** [ENG] A sediment sampler that consists of a Plexiglas cylinder closed at both ends by rubber force cups; in the armed position the cups are pulled outside the cylinder and restrained by a releasing mechanism, and after the sample is taken, a length of surgical rubber tubing connecting the cups is sufficiently prestressed to permit the force cups to retain the sample in the cylinder. (van 'dōrn, sam-pələr)

**vane** [MECH ENG] A flat or curved surface exposed to a flow of fluid so as to be forced to move or to rotate about an axis, to rechannel the flow, or to act as the impeller; for example, in a steam turbine, propeller fan, or hydraulic turbine. ('vān)

**vane anemometer** [ENG] A portable instrument used to measure low wind speeds and airspeeds in large ducts; consists of a number of vanes radiating from a common shaft and set to rotate when facing the wind. ('vān an-ə'mām-ətər)

**vane motor rotary actuator** [MECH ENG] A type of rotary motor actuator which consists of a rotor with several spring-loaded sliding vanes in an elliptical chamber; hydraulic fluid enters the

chamber and forces the vanes moves to the outlets. ('vān 'ak-cha,wād-ər)

**vane-type instrument** [ENG] A strument utilizing the force of re fixed and movable magnetized i

force existing between a coil and shaped piece of soft iron, to mo pointer. ('vān ,tip ,in-strə-mə

**vapor** [THERMO] A gas at the critical temperature, so that fied by compression, without lc perature. ('vā-pər)

**vapor barrier** [CIV ENG] A layer plied to the inner (warm) surfa wall or floor to prevent absorpti sation of moisture. ('vā-pər ,l

**vapor-compression cycle** [ME] frigeration cycle in which refrigerate through a machine which allow boiling (or vaporization) of liquit passes through an expansio producing a cooling effect in followed by compression of ('vā-pər kom'preshən ,sī-kāl )

**vapor cycle** [THERMO] A therm operating as a heat engine or a ing which the working substanc through, the vapor state. ('vā

**vapor degreasing** [ENG] A type cedure for metals to remove & lightly attached solids; a solvent roethylene is boiled, and its densed on the metal surface 'grēs-ing )

**vapor-filled thermometer** [ENG] A por-filled temperature measure moves or distorts in response induced pressure changes fron or contraction of the sealed chamber. ('vā-pər ,fīld thərm

**vaporimeter** [ENG] An instru measure a substance's vapor pre that of an alcoholic liquid, in or its alcohol content. ('vap-ə'rī

**vaporization** See volatilization shən )

**vaporization coefficient** [THERM] the rate of vaporization of a given temperature and corre pressure to the rate of vaporiz be necessary to produce the sam at this temperature if every vapc ing the solid or liquid were ('vā-pə-rāz-ə-shən ,kō-ə-fish-ən )

**vaporization cooling** [ENG] Cc ization of a nonflammable liqu boiling point and high dielect liquid is flowed or sprayed or equipment in an enclosure wh carrying the heat to the enclos tors, or heat exchanger. Also krive cooling. ('vā-pə-rāz-shən )

**vaporizer** [CHEM ENG] A pr which a liquid is heated until it